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HEWLETT-PACKARD COMPANY  
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EXAMINER

DUDDING, ALFRED E

ART UNIT PAPER NUMBER

2853

DATE MAILED: 08/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/056,292

Applicant(s)

PETERSON ET AL.

Examiner

Alfred E. Dudding

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 20-23 and 26-33 is/are rejected.
- 7) ☒ Claim(s) 18, 19, 24 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:

page 9, paragraph [00033], line 2, change “214” to - -114- -.

Appropriate correction is required.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “10” has been used to designate both “10” (printing system of Figure 1) and “10” (printing system of Figure 3). The reference character “10” in Figure 3 should be changed to “110” to comply with the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 12, 14 – 17, and 26 - 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakurada et al. (U.S. 4,672,432 A).

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Sakaruda et al. disclose a six ink jet printing system, comprising a plurality of rows of dark dye nozzles, each row of dark dye nozzles coupled to a supply of ink and having a color selected from the group consisting of cyan and magenta (Figure 5, ink supplies element 151, dark dye nozzles 152 BK, 152 YK, 152 CK, 152 MK); a row of yellow dye nozzles (Figure 5, element 152 Y); one or more rows of adjacent black dye nozzles coupled to a supply of black ink; and a plurality of rows of light dye nozzles, each row of light dye nozzles coupled to a supply of ink and having a color selected from cyan, magenta, yellow, and black (Figure 5, element 152 Ca, light cyan, 152 MA, light magenta); wherein each of the rows of the yellow dye nozzles, dark dye nozzles, light dye nozzles, and black dye nozzles are arranged substantially parallel to each other, and wherein each row of nozzles adjacent to a row of dark dye nozzles and the one or more rows of black dye nozzles is a row of light dye nozzles or the row of yellow dye nozzles, Figure 6, plural elements 151 are arranged to form printhead 101. Sakaruda et al. disclose an eight jet printing system comprising at least three rows of light dye nozzles, wherein each row of light dye nozzles is coupled to a supply of light dye ink of a different color, the supplies of light dye ink including the colors of light cyan, light magenta, light black, and light yellow, Figure 2, element 52 YA, 52 CA, 52 MA, 52 BA. Sakaruda et al. teach that the rows of dark dye nozzles are separated from each other by rows of light dye nozzles, Figure 2, clearly seen. Sakaruda et al. disclose a printing system wherein the rows of dark dye nozzles with the exception of any row of yellow dark dye nozzles are separated from each other by rows of light dye nozzles and yellow dye nozzles, Figure 2, clearly seen. Sakaruda et al. disclose a printing system wherein the at least one row of dye nozzles coupled to a supply of black ink is followed by a row of yellow dye nozzles which is followed by rows of the remaining nozzles arranged in

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alternating rows of light and dark dye nozzles, with a row of light dye nozzles adjacent the row of yellow dye nozzles, Figure 2, clearly seen. Sakaruda et al. teach that a column of yellow die nozzles is located at the other end of the plurality of rows of dye nozzles, and wherein the remaining rows of dye nozzles are arranged between the black and yellow nozzles rows of dye nozzles in alternating rows of light and dark dye nozzles starting with a row of light dye nozzles adjacent the at least one row of dye nozzles coupled to a supply of black ink, Figure 2, clearly seen. printhead. Sakaruda et al. disclose a printing system wherein the at least one row of dye nozzles coupled to a supply of black ink is coupled to a supply of dark black ink and is followed by a row of dye nozzles coupled to a supply of light black ink, wherein only one row of dye nozzles is coupled to a supply of yellow ink, and wherein dark and light ink rows alternate, with the row of dye nozzles coupled to a supply of yellow ink being treated as a dark ink row in this alternation pattern, Figure 2, clearly seen. Sakaruda et al. disclose a printing system wherein one column of yellow nozzles is located at the other end of the plurality of nozzle columns adjacent a column containing dark dye nozzles, and wherein one column of dark yellow nozzles is located directly between one column of light dye nozzles and the one or more column of dark black dye nozzles, Figure 2, clearly seen.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claim 1, 2, 3, 7, 9, 11, and 27 - 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Yoshida (U.S. 6,334,665 B1).

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Yoshida discloses a drop-on-demand printing system having a plurality of nozzle rows, Figure 6, comprising a plurality of rows of dark dye nozzles (Figure 6, BK-black, C1-dark cyan, M1-dark magenta, Y-yellow), each column of dark dye nozzles coupled to a source of dark dye ink (Figure 6, C1-light cyan, M2-light magenta); a plurality of rows of light dye nozzles, each rows of light dye nozzles coupled to a source of light dye ink; and one or more rows of adjacent dark black dye nozzles coupled to a source of black dye ink, the rows of black dye nozzles located at one end of the plurality of nozzle rows, wherein each of the rows of dark dye nozzles and light dye nozzles are arranged substantially parallel to each other, and wherein at least one column of dark dye nozzles is separated from the next row of dark dye nozzles by a row of light dye nozzles, Figure 6, rows of dark dye nozzles (C1 and M1) are separated by the row of light dye nozzles, C2 (light cyan). Yoshida discloses that the printing system has least four rows of dark dye nozzles, wherein each row of dark dye nozzles is coupled to a supply of dark dye ink of a different color, the supplies of dark dye ink including the colors of black, cyan, magenta, and yellow, Figure 1(BK-black, C1-dark cyan, M1-dark magenta, and Y-yellow). Yoshida teaches that the printing system comprises at least two rows of light dye nozzles, wherein each row of light dye nozzles is coupled to a supply of light dye ink of a different color, the supplies of light dye ink, including the colors of light cyan and light magenta, Figure 6 (C2-light cyan, M2-light magenta). Yoshida teaches that at least one column of dye nozzles is coupled to a supply of black ink and is located at one end of the plurality of rows of dye nozzles. Yoshida teaches that a column of yellow die nozzles is located at the other end of the plurality of rows of dye nozzles, and wherein the remaining rows of dye nozzles are arranged between the black and yellow nozzles rows of dye nozzles in alternating rows of light and dark dye nozzles starting with a row

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of light dye nozzles adjacent the at least one row of dye nozzles coupled to a supply of black ink, Figure 6, the yellow row is at the end of the printhead.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 13 and 20 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaruda et al. (U.S. 4,672,432 A) in view of Brown (U.S. 6,273,550 B1).

Sakaruda et al teach all of the limitations of the claimed invention except for a seven ink jet printing system and a printing system wherein a combination of light dye ink and dark dye ink is used during low speed printing and only dark dye ink is used during high speed printing. Brown discloses a seven ink jet printing head, Figure 8B. Brown teaches that a combination of light dye ink and dark dye ink is used during low speed printing and only dark dye ink is used

during high speed printing, Column 6, lines 52 – 60.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that printing with dark dye inks (black ink for text) would be faster than printing with color inks or a combination of color or dark dye inks due to the calculation time involved in obtaining color gamut and placement data.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the seven ink jet print head of Brown in the printhead of Sakaruda et al. in order to reduce the amount of inks required in the eight ink jet printhead of Sakaruda et al. and produce more color versatility than the six ink jet print head of Sakaruda et al.

#### *Allowable Subject Matter*

9. Claims 18, 19, 24, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. A search of prior art did not cite a printing system wherein the ink used during high-speed printing is stored in the supplies coupled to the dark dye nozzles and yellow dye nozzles as claimed in the limitations of claims 18 and 24.

b. A search of prior art did not cite a printing system wherein the ink used during low speed printing is stored in the supplies coupled to the light and dark dye nozzles and yellow dye nozzles, and wherein the light dye nozzles are not used during high speed printing as claimed in the limitations of claims 19 and 25.



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***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alfred Dudding whose telephone number is (703) 308-6082. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, AU 2853, can be reached at (703) 308-4896. The fax phone numbers for this Group are (703) 305-3432, (703) 305-3431, (703) 308-7382, (703) 308-7724, and (703) 308-7722. The examiner's fax phone number is (703) 746-4390.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 308-0956.



Stephen D. Meier  
Primary Examiner

Alfred Dudding



7-17-03